

**United States Naval Academy
Mechanical Engineering Department**

EM472 Mechanical Engineering Design

Catalog Description: EM472 Mechanical Engineering Design

Credit: 3 (2-2-3)

A capstone study of the engineering design process emphasizing the integration of objectives, analysis of alternatives and synthesis of components. Practical experience is gained by participation in a team project.

Prerequisites: EM371 and EM477, or approval of department chair.

Corequisites: None

Textbooks: None

Course Director: Prof. S. M. Miner

Objectives¹:

1. To provide the students with a major design experience that utilizes teams to propose, complete, and defend an engineering design project. (b,c,d,e)

Course Content:

No.	Topic or Subtopic	hrs.
1	Project Management	3
2	Engineering Economics	3
3	Engineering Ethics	3
4	Capstone Project	52

Evaluation:

1. Quizzes	<input type="checkbox"/> Yes	<input type="checkbox"/> No
2. Homework	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
3. Exams	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
4. Laboratory Reports	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
5. Oral Presentations	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
6. Design Reports/Notebooks	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
7. Prototypes/Demonstrations	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
8. Projects	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
9. any other evaluation tools used	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

Acquired Abilities²:

- 1.1 Students will demonstrate an understanding of project management. (2,3,8)
- 1.2 Students will demonstrate an understanding of engineering economics. (2,3)
- 1.3 Students will be aware of the responsibilities of professional engineers. (8,9)
- 1.4 Students will be able to complete a major team design experience. (5,6,7,8)

Date of Latest Revision: 2 NOV 2001

¹ Letters in parenthesis refer to the [Program Objectives](#) of the [Mechanical Engineering Program](#).

² Numbers in parenthesis refer to the evaluation methods used to assess student performance.